

400G network positions Kazakhtelecom to better serve Central Asia



Digitalization is accelerating economic growth and improving the quality of life across Kazakhstan. As the largest network operator in Central Asia, Kazakhtelecom is at the heart of this transformation.

A Juniper customer for nearly 20 years, Kazakhtelecom is building a 400G-ready network to meet growing demand for 4G/5G mobile, high-speed Internet, pay TV, enterprise IT, telco cloud, and wholesale transit services within the country and around the world.

OVERVIEW

Company	Kazakhtelecom
Industry	Service Provider
Products Used	PTX10004, PTX10008, PTX10016, MX960, QFX5120
Region	EMEA

CUSTOMER SUCCESS AT-A-GLANCE

2X

Increase in core network capacity with a smooth growth path

>50%

Decrease in power consumption of core network after PTX10000 migration

400G

Network sets the stage for expansion in Central Asia

20

Years using Juniper routing and switching

CHALLENGE

Meet digital needs from the mountains to the steppes

“We have been upgrading our network capacity over the last several years,” says Rollanbek Bekbolatov, lead manager of the Innovation Division at Kazakhtelecom. “We wanted our network to be 400G-ready to meet our customers’ digital needs and to prepare for 5G.”

With 45% of Kazakhstan’s population living in rural areas, Kazakhtelecom delivers high-speed Internet to thousands of villages. It has been migrating fixed broadband customers to fiber so they can enjoy Internet speeds up to 500 Mbps from home.

Kazakhtelecom Group of companies, which includes two major mobile operators, has the largest subscriber base in Central Asia with 14.5 million subscribers and is a leader in launching 5G and telco cloud services.

Businesses of all sizes are digitizing, driving a wide array of customer connectivity needs that the carrier must address, including point-of-sale, data center, cloud services, and IoT sensors for smart agriculture. Moreover, Kazakhtelecom’s wholesale transit business is on the upswing as more global network operators serve the region.




SOLUTION

400G delivers network scalability

Kazakhtelecom has been migrating to Juniper 400G-ready routing and switching for its core, edge, and metro networks and international peering points. Juniper 400G solutions are designed to scale, with proven reliability and agility to adapt to future needs.

The core upgrade involved deploying the 400G-ready Juniper PTX10008 with LC1202-36MR line cards Packet Transport Routers, which double the carrier's core network capacity and provide plenty of headroom for growth. Kazakhtelecom uses the high-scale, high-density Juniper MX960 Universal Router at the provider edge and peering points as well as for advanced broadband network gateway functions.

Business and cloud services are delivered through the provider's metro data centers. An IP fabric, composed of Juniper QFX Series Switches QFX5120-32C, QFX5120-48Y for the physical network and EVPN-VXLAN for the overlay network, delivers scalable, simple, and flexible connectivity to support customer and internal workloads.


OUTCOME

Accelerate growth and improve quality of life

A next-generation 400G network supports Kazakhtelecom's consumer, enterprise, and wholesale businesses.

Kazakhtelecom has migrated about half of its 1.8 million Internet customers to fiber, and it continues to bring digital connectivity advances to villages and rural areas. The company anticipates that its 5G services will be available to 80% of the Kazakhstan population by 2027.

Modernization is proving to be more environmentally sustainable. "After migrating to the PTX10000 routers, the power consumption of the core network decreased by half," says Nurlan Meirmanov, Chief innovation officer.

These investments help position Kazakhtelecom as a communications leader in Central Asia. In 2023, it established its first presence in Frankfurt and Hong Kong, directly connecting with cloud hyperscalers and global network operators.

"These points of presence improve connectivity for people inside our country and provide faster transit to our wholesale customers," says Nurlan Meirmanov. "We have the potential to become a regional traffic exchange point."

The company is also participating in the Digital Silk Way infrastructure project, a multicarrier undertaking that includes building subsea links across the Caspian Sea that connect Asia and Europe.



"A Juniper network helps improve the quality of our services and contributes to our customer satisfaction."

Nurlan Meirmanov
Chief Innovation Officer, Kazakhtelecom

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